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February 7, 1982
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Implement&Tractor

The business magazine of the farm & industrial equipment industry

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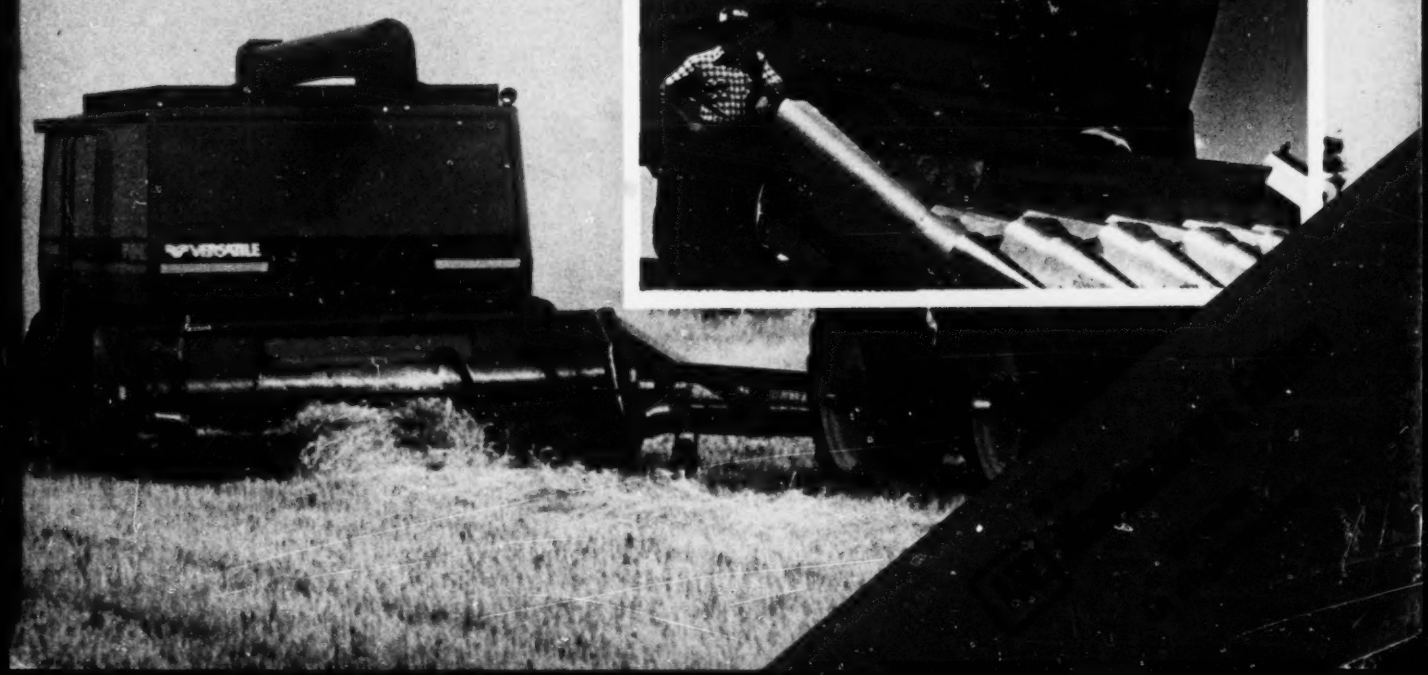
THREE NEW COMBINE DEVELOPMENTS page 8

and reviews of three big Class VI models, page 14



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INTERTEC PUBLISHING CORP.

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Implement&Tractor

The business magazine of the farm & industrial equipment industry

in this issue...

Three New Combine Developments...

8: Claas, Versatile, Avco New Idea introduce new combines. Claas of America's self-propelled model has eight synchronized separating cylinders. Versatile offers a big-capacity pull-type rotary model. Avco New Idea has, in effect, produced the first *corn-only* type of rotary combine with its 858 corn sheller attachment.

...and Reviews of Three Class VI Models

14: Canada's Prairie Agricultural Machinery Institute tests Deere's 8820 combine, International Harvester's 1480 Axial Flow model and the Gleaner N-6 combine from Allis-Chalmers.

16: Should You Own a Leasing Company? These Dealers Do. The Streacker brothers of Ohio gain maximum benefits for their multi-store operation through their own leasing company.

On the cover... New combines by Claas of America, top; Versatile, lower left, and Avco New Idea, right. Story on page 8.

DEPARTMENTS

What's Ahead 4
Editor's Notebook 5
News Briefs 6
What's New 20, 35
New Literature 35
Farm Equipment Patents 36
Classified Ads 38
Index to Advertisers 38
Brown Pages 39

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Women in engineering

Dr. Rodica Baranescu, a combustion engine expert educated in Romania and currently working in the U.S., speaks about the challenges and opportunities offered to women by an engineering career.

Aspirants warned not to allow a particular field of endeavor to become the "Home-Ec" of the technical disciplines. By Chuck McMurray

■"I WOULD much prefer to talk on 'alternate fuels for diesel engines'," began Dr. Rodica A. Baranescu, divisional chief engineer of the advanced technology components group for International Harvester. She was addressing the Women Engineers Symposium at the 1981 SAE International Off-Highway Meeting and Exposition, held in Milwaukee in mid-September.

For the informal symposium, Baranescu was asked to speak on the topic, "Women in Engineering—Opportunities and Hurdles." Being a native of Romania, she chose to approach the subject by discussing the differences between the pursuit of technical careers by women in the U.S. and in eastern European countries, using her personal experience as an example.

"It's accepted that most women in Romania must work to help support the family," she explained, "so early on they are encouraged to develop any talent or ability they exhibit. I preferred math and physics in high school and, upon entering college, I chose engineering rather than the pure sciences because it offered more opportunities for subsequent employment."

Her first hurdle, one faced by all regardless of sex, was a competitive screening to gain admittance to the Technical Institute of Bucharest. Subsequently, she opted for the thermal sciences in graduate school, where she was the lone woman in a class of 40, and received her master's degree in internal combustion engines. Through a government arrangement, obligatory upon both students and industry, all graduates were required to work for a minimum of one year. A choice of the available jobs was permitted according to the graduate's rank, but all positions paid the same salary for the minimum period.

In 1965 Baranescu took a teaching post at the Technical Institute where she also conducted research in the use of alternative fuels in diesel engines, received her doctorate in 1971, and rose to the position of Professor in the Chair of Internal Combustion Engines. During that time the Technical Institute of Bucharest and the University of Wisconsin initiated a cooperative exchange program and Baranescu spent 1975 in the U.S. Subsequently, she and her husband, also a research engineer, returned to the U.S. and both are currently employed by IH.

(Continued on page ME-14)

Table 1
Enrollments of women and men full-time by selected curriculum and total 1979

	Women	Men	Total
Chemical	6,477	24,926	31,403
Civil	5,048	39,269	44,317
Computer	2,094	8,814	10,908
Electrical	5,341	64,782	70,123
General	8,991	50,972	59,963
Industrial	2,571	9,600	12,171
Mechanical	4,821	54,557	59,378
All Other	6,684	45,541	52,225
TOTAL	42,027	298,461	340,488

Table 2
Distribution of experienced women engineers By Engineering Discipline

Discipline	Number	%
Aeronautical	1,200	6.1
Chemical	2,600	13.1
Civil	1,600	8.1
Electrical	1,900	9.6
Mechanical	3,300	16.7
Other	9,200	46.4
TOTAL	19,800	100.0

Source: U.S. Scientists and Engineers, 1978 (NSF 80-304), National Science Foundation.

Table 3
Distribution of Engineers by Sex

Discipline	Men	Women	Total	% Women
Aeronautical	42,800	1,200	44,000	2.7
Chemical	59,500	2,600	62,000	4.2
Civil	167,800	1,600	169,500	0.9
Electrical	229,700	1,900	231,600	0.8
Mechanical	221,100	3,300	224,400	1.5
Other	527,600	9,200	536,800	1.7
TOTAL	1,248,500	19,800	1,268,300	1.6

(advertisement)

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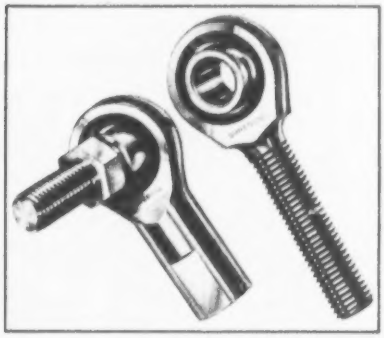

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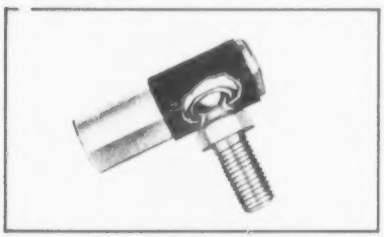

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Women in Engineering

(Continued from page ME-4)

No special treatment

"Women moving into the technical/engineering fields seem to show a preference for chemistry, computer science, and electrical engineering, in that order," Baranescu said. She pointed out that the tendency can probably be attributed, at least in part, to less physically stressful working environments normally associated with these jobs in comparison with other engineering/technical careers. "But," she hastened to add, "these other areas should not exclude women because of that, for some women may seek those challenges. Positions should not be classified on the basis of sex: individuals should be given the opportunity to prove themselves."

When asked about affirmative action programs that would impose hiring quotas, Baranescu expressed a basic dislike for any hiring criteria other than ability, but added that she could understand the necessity for the quota system to "open doors." She looks upon this and similar programs as initial means to overcome long-standing barriers faced by women and minorities: programs that will be unnecessary once women have had ample opportunity to prove their worth in traditionally male-dominated fields. Likewise, promotion should be based solely on ability and merit.

Women represent a vast, untapped resource of which the industrial community should avail itself. Parents, schools, and society in general must cast tradition aside, encourage their daughters to realize their potential, and expose them early on to the opportunities for satisfying technical careers.

Schooling and jobs

Figures from the Engineering Manpower Commission of American Association of Engineering Societies for the most part bear out the opinions of Dr. Baranescu. Information gathered in 1979 from 286 engineering schools reflects the enrollment statistics shown in Table 1. The most popular course of study for women was chemical engineering, followed by electrical and civil. The large number shown in general engineering consists mainly of early-year students who have not yet reached the point of designating a major field of study.

The enrollment statistics differ slightly from the 1978 National Science Foundation figures, which report the distribution of experienced women engineers by discipline. As shown in Table 2, the mechanical engineering field is where the largest single percentage of women are employed, with chemical and electrical next. Although the greatest concentration of women is in mechanical engineering, Table 3 shows the highest proportion of women as compared with men is in chemical engineering.

Salary

According to AAES, the most sought after group in 1980 were women holding degrees in chemical engineering. Salary offers, about 1.4 per woman graduate in this group, averaged $1,804 per month. Only women with a degree in petroleum engineering received a higher average offer: $1,995 per month.

The average salary offered to women engineering graduates in all disciplines in 1980 was $1,725 per month, compared with an average salary of $1,695 offered to their male counterparts.

With nearly 6,000 graduates at the bachelor level per year, women are a steadily increasing percentage of the engineering profession and, accordingly, they are becoming more of a factor in the professional labor market our industries depend upon. □

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